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ABSTRACT

Hazard Community College, in Kentucky, has implemented a new instructional methodology for economics courses called Economics as a Second Language (EcSL). This teaching approach, based on the theory of Rendigs Fel that the best model for learning economics is the foreign language classroom, utilizes strategies similar to those employed in English-as-a-Second-Language instruction. The EcSL method views effective teaching as providing students with the higher learning levels of analysis, synthesis, and evaluation, in addition to the lower learning levels. Course strategies have included the following: (1) introducing the class as an exciting but difficult course; (2) promising passing grades to students who succeed at three different aspects of the course (tests, assignments, and a paper); (3) notifying students' families about the difficulty of the course; (4) developing three 40-item multiple choice tests; (5) having students complete correctives and retake tests until a score of 80 is achieved; (6) notifying advisors of student successes; (7) using class time to answer questions, demonstrate application of concepts, and have students perform tasks and complete daily application assignments; (8) having students complete a paper analyzing a particular firm and its market as a way of engaging them in analysis, synthesis, and evaluation learning; and (9) creating peer review groups to read and offer suggestions for paper improvement. In follow-up surveys, students reported being able to use self-questioning, rehearsal, and problem-solving methods; to use teacher-provided schemes; and to develop their own schemes. Flow charts, tables, course handouts, and references, as well as copies of students' course evaluations before and after implementation of EcSL are included. (PAA)

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EcSL: Teaching Economics as a Second Language[1]

Presented at the
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Introduction

Professor Rendigs Fels of Vanderbilt University has written (Fels, 1984) that today's "students do not know how to study in general and do not know how to study economics in particular" (p. 2). Fels has indicated that students approach the study of economics much as they do a history or literature class when, in fact, it is much more like a foreign language course than anything else. He has recommended that economics students (1) become self-conscious about study methods needed to learn economics, (2) use self-questioning methods when studying, (3) use rehearsal methods when studying, (4) use problem-solving methods when studying, (5) use teacher-provided schemas for organizing economic knowledge, and (6) should be trained to develop schemas for themselves when studying economics (p. 2).

The Problem

Our problem in teaching economics is that we concentrate so much on the parts (tools) that our students lose sight of the mission of our course. An analogy would be that if we were teaching students how to raise a garden and the student mastered the use of common garden tools, eg., spade, hoe, fertilizer, etc., but failed to produce a crop we would feel that we had failed in our task. In the economics classroom we teach students how to construct various models, and how to calculate several statistical conditions. The students also learn many principles and laws. Each of which is an important tool but only a tool. John Maynard Keynes

explained that "economics is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw conclusions." The "crop" that economic teachers must produce is to enable students to use our tools to make decisions eg., to process data and arrive at independent conclusions.

So What's Different?

It is the position of this paper that Rendigs Fels perception of the process necessary to learn economics is correct. The paper will describe an attempt to crystalize Fels methodology and show evidence of some practical application of his concepts used at Hazard Community College since 1990. The paper is institutional in that our small size (1,600 students), few economics offering (two sections of micro and one of macro per term), and small class size (7 to 32 students each) have not been suitable to produce sufficient data for controlled experiments. However, the student outcomes have been positive and to the extent possible are presented herein for the purpose of encouraging more experimentation of this approach in the teaching of economics.

EcSL: What Is It?

According to Fels the best model for learning economics is the foreign language classroom rather than a history or English classroom. Literature about teaching foreign languages differentiated between foreign language classrooms and English as a second language classrooms (ESL). In both

Table 1
Moskowitz Findings: Classroom Behavior of Outstanding Foreign Language Teachers

In a 1976 research project, Gertrude Moskowitz identified and studied a group of outstanding foreign language teachers in the Philadelphia area. In comparison with a matched group of heterogeneous teachers, the outstanding teachers exhibited the following classroom behaviors and interactions:

1. The target language dominates the classroom interaction, whether or not the teacher or the students are speaking.
2. The teachers have an excellent command of the target language.
3. Even in first-level classes, very little English is used.
4. The teachers have fewer verbal tics.
5. Students use the foreign language to raise questions.
6. The amount of teacher talk is less.
7. The teachers are active nonverbally and use many more hand gestures.
8. The teachers are more expressive and animated.
9. The teachers move around the classroom a great deal.
10. The teachers use more behaviors that encourage and reinforce student participation, whether communicating in the foreign language, English, or nonverbally.
11. The teachers give students more immediate feedback.
12. The climate is warm and accepting.
13. The teachers often smile, praise, and joke.
14. Their praise is longer, more varied, and they use more nonverbal praise.
15. There is more laughter in their classes.
16. The teachers personalize the content more.
17. The students are "with" the teacher, rather than being apathetic or flippant.
18. Students exhibit more outward signs of enthusiasm to participate.
19. Student behavior is very seldom criticized.
20. Less classroom time is devoted to silent reading and written tasks.
21. There is less writing on the board by the teacher.
22. Students speak to the teachers before and after class.
23. The teachers greet students before the class formally starts.
24. There is a greater amount of warm-up questions, review, and focusing on the skill of speaking.
25. There is a greater number of different activities per lesson.
26. The pace of the lessons is generally activities per lesson.
27. Drills are conducted rapidly.
28. The teachers have excellent classroom control.
29. The teachers exhibit patience.
30. When correcting student behavior, the teachers tend to joke or to maintain eye contact with students.
31. When correcting student errors, the teachers do so gently.
32. Students assist the teachers more in setting up and running equipment.

(Moskowitz, 1976, pp. 156-7)

cases a strong audio-lingual approach was used in which students heard many repetitions of the new language and were encouraged to use their new terminology often. Many games and physical activities were used in the classroom to individualize student participation. The goal was to teach each student the terms, their meaning, and basic applications within the culture under study. When immersion was used as a teaching technique the class was only permitted to communicate via the language under study and field trips were utilized to restaurants, medical centers, and/or the native country where use of the language could be tested and immediate feedback gained. These activities also served as motivational experiences which encouraged students to increase their knowledge.

In the English as a second language model (ESL) the teacher taught English to foreign-speaking students (usually in preparation for attempting future study in which English would be the only language used). ESL was a preferred teaching situation because students were immersed in English speaking situations, in almost all activities, and by almost all media encountered. ESL students received constant repetition and rapid feedback in and out of the classroom that reinforced successful usage of the English language. The students were able to apply the language successfully which motivated them to move more rapidly from simple to complex usage. Because we live in an environment that demands economic decision making from our citizens,

encourages movement from simple to more complex economic decisions throughout life, and all media present some economic data the teaching approach described herein has been referred to as EcSL (Economics as a Second Language).

The Hazard Community College Approach

Hazard Community College students represent a cross-section of students. Their ages, experiences, abilities, goals, and interests in taking a principles of economics class differ. We have attempted over the past several years to create a situation in which students with various levels of skills and abilities have been able to work very hard at a systematic approach to learning. The results of their efforts appear to be (1) that more students know more about economics after the class than previous classes, (2) they are better able to apply economic concepts in their daily lives than previous classes, (3) they are more confident about using economic terms and tools than previous classes, (4) they have learned to work in a more cooperative; less competitive environment, (5) they see more relationship between economics and life, (6) they are better prepared to perform their role as citizens than were previous classes, (7) they use self-questioning study techniques, (8) they use rehearsal study techniques, (9) they use teacher-provided schemas for learning economics, and (10) they prepare their own schema and present it for approval to other students before turning it in for credit in the course.

How Does it Work?

Using Benjamin Bloom's taxonomy of educational goals (Bloom, Madaus, and Hastings, 1981) as a model for effective teaching we find that students who can (1) recall specific information, or (2) can demonstrate information given, or even (3) use methods, concepts, and theories in new situations are operating only at the lower levels of learning: (knowledge, comprehension, and application). The higher levels of learning are analysis, synthesis, and evaluation. Students performing at these levels must be able to break information down into its constituent elements, put together elements or parts to form a whole requiring original, creative thinking, and be able to judge the value of ideas and methods by applying standards and criteria. Too many economics students have mastered the lower levels of learning but not the higher levels. They, therefore, lack confidence in what they have learned and cannot successfully apply what they have been taught in situations outside their classroom experience. Successful economic students should be able to differentiate and apply economic concepts--not just recall a correct answer--or demonstrate information presented in class.

But Students Must Know the Terms . . . Right?

We have used a combination of mastery learning (Bloom, 1968) and personalized systems of instruction (Keller, 1968) techniques to prepare students for recall, understanding and application tasks. In Bloom's approach students are

Table 2. Benjamin Bloom's
Taxonomy of Educational Goals

AREA OF TAXONOMY	DEFINITION	WHAT TEACHER DOES	WHAT STUDENT DOES
Knowledge	Recall or recognition of specific information	Directs Tells Shows Examines	Responds Absorbs Remembers Recognizes
Comprehension	Understanding of Information given	Demonstrates Listens Questions Compares Contrasts Examines	Explains Translates Demonstrates Interprets
Application	Using methods, concepts, principles, and theories in new situations	Shows Facilitates Observes Criticizes	Solves problems Demonstrates use of Knowledge Constructs
Analysis	Breaking information down into its constituent elements	Probes Guides Observes Acts as a resource	Discusses Uncovers Lists Dissects
Synthesis	Putting together constituent elements or parts to form a whole requiring original, creative thinking	Reflects Extends Analyzes Evaluates	Discusses Generalizes Relates Compares Contrasts Abstracts
Evaluation	Judging the values of ideas, materials, and methods by developing and applying standards and criteria	Clarifies Accepts Harmonizes Guides	Judges Disputes Develops criteria

(Bloom, 1968)

presented new material and then tested over that material. Students who have mastered the material then move on to an enrichment activity (e.g., as using interactive software for deeper understanding). Students who did not master the material participate in a corrective activity such as writing specific answers to missed test questions with the help of the textbook. Those students then take a second test over the same material which results in their mastery of the material. All students are then presented new material followed by the same process. As a result of doing corrective work, students are able to improve their test performance by earning a higher score on the second test. From the teachers viewpoint instead of (1) teaching, (2) reviewing, then (3) testing, we now (1) teach, (2) test, (3) review incorrect answers (rehearse and learn to use self-questions), then (4) test again. This forces weaker students to process material in the same manner better students have processed it before testing.

Our early experience at using this technique was unsatisfactory because it fell short of our goal of having students successfully attain the higher learning levels of analysis, synthesis, and evaluation. We realized that in order for our students to succeed at the highest levels of learning we were going to have to require them to put forth more time and energy. It also would require more and different kinds of inputs on our part and it would require a greater use of resources than we had previously used in teaching economics.

Class Activities

In order to master the recall, understanding, and application levels of learning we:

1. Introduce the class as an exciting but very difficult course of study.
2. Promised every student in the class an "A", "B", or "C" grade if they succeeded at three different aspects of the class.
3. Wrote each student's family and told them they were taking a very difficult course and their support was needed if the student was to be successful.
4. Used the textbook's test bank to prepare three versions of each test the students might take (three tests were to be given consisting of 40 multiple choice items each).
5. Used a Scantron grading machine to quickly score each version of the test. No grade was recorded until the student scored 80 percent or higher.
6. Students who scored less than 80 percent completed correctives outside of class. They then exchanged their old test, answer sheet, and correctives in our Learning Center for another version of that particular test. They took the test in the Learning Center. We scored it on the Scantron grader and gave them the results as they came into the next class meeting. If necessary, they then did correctives again and took another version of the test until a score of 80 percent or higher was obtained.

7. After each initial exam, we moved on to new material during the next class meeting. Their deadline for scoring 80 percent or higher on each test was the next scheduled exam. Students had to put a lot of time into economics in order to meet this schedule. Attendance increased because they could not miss classes and complete their tasks. In addition, student attention and participation changed drastically after the first test. Because they recognized the importance of precise language in using economic terminology they asked a great many clarifying and application questions in class. They wanted to be specific about the terminology and avoid doing correctives if possible. In the process they became active learners.
8. We wrote their advisors (with a copy to the student) and told them how pleased we were with their efforts and their scores to date. We asked them to encourage their advisees as they met with them.
9. Class time consisted of answering student questions about the reading assignment, showing application of concepts, and having them perform tasks, eg., construct a demand curve, calculate elasticity of demand, or construct a field of indifference curves. In Fels' terms, they were using problem-solving methods and teacher-provided schemas. For grading purposes, they completed daily application assignments which were turned in at the end of the term in a notebook.

Table 3
Comparison of Fels
Recommendations for Learning
Economics with EcSL's Teaching Processes

Fels Recommendations for Learning Economics	EcSL Processes for Teaching Economics
Students should:	Students
1. Become self-conscious about study methods needed to learn economics	1. Have to master basic terminology. The students are tested, do correctives, and are retested until mastery level is obtained by all students
2. Use self-questioning methods when studying economics	2. Fifty percent of classtime is spent answering student questions
3. Use rehearsal methods when studying economics	3. Students rehearse via testing methods and class problem solving activities
4. Use problem-solving methods when studying economics	4. Fifty percent of classtime is spent in learning economic tools
5. Use teacher-provided schemas for organizing economic knowledge	5. Students continue the use of economic tools outside of class by preparing a notebook of applications of economic problems
6. Be trained to develop schemas for themselves when studying economics	6. Students complete a term paper using their newly acquired economic tools. The paper is presented to a student panel before final presentation for credit.

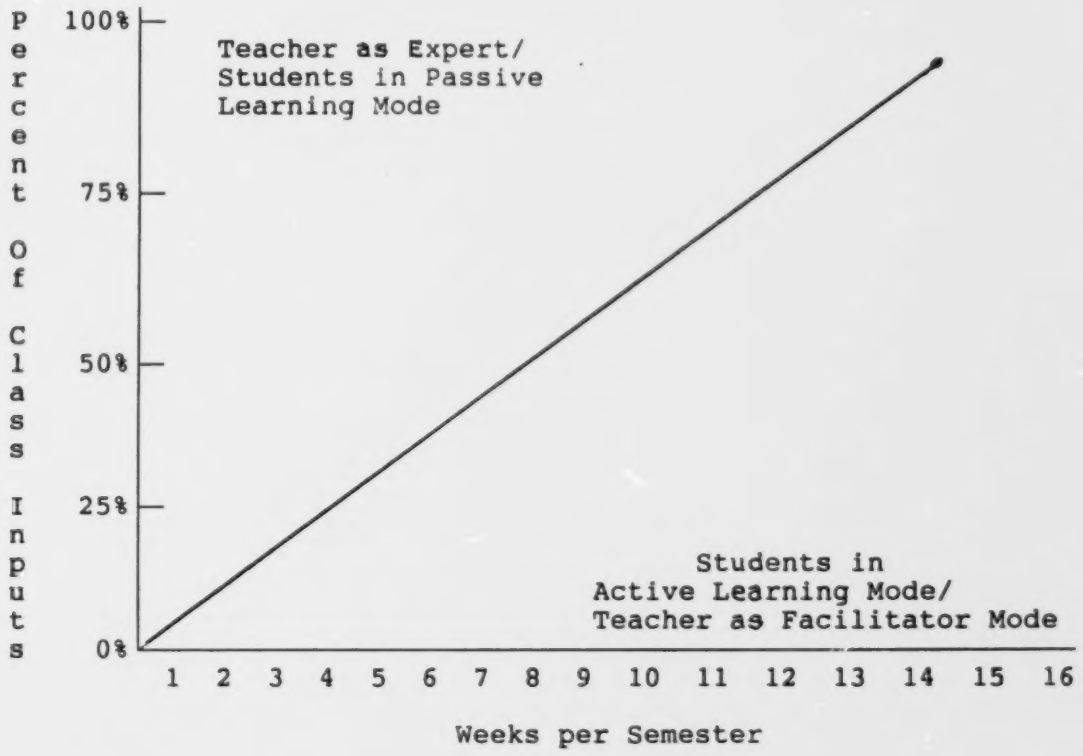
10. To achieve analysis, synthesis, and evaluation learning we required a paper from each micro student analyzing a particular firm and its market (FORD, IBM, etc.). In Fels' terms, the students were being trained to develop schemas for themselves. This forced the students to seek economic data from various media making them more conscious of it's existence.
11. When they finished their micro papers they submitted them to a peer review team consisting of three other students. Each team member read their paper and offered suggestions for improvement. One student then signed off on the use of language, another signed off on spelling and punctuation, a third student signed off on the use of economic terms, examples and concepts. The students then rotated assignments on the next paper. The students were responsible for collecting economic data using newly acquired economic tools to present their data, and most important, arrived at their own conclusions.

Results

As a result of using this approach to teach economics, we found that the focus of the entire class was on learning economics. Our classroom situation became more like a work environment among equals than a student to teacher environment (see Table 4). Our job became one of encouraging, praising, clarifying, and assisting as opposed to being the

Table 4

EcSL Classroom Activity. Class began with the teacher as expert/student as passive learner. By the end of class all students were in an active learning mode/teacher was facilitator.

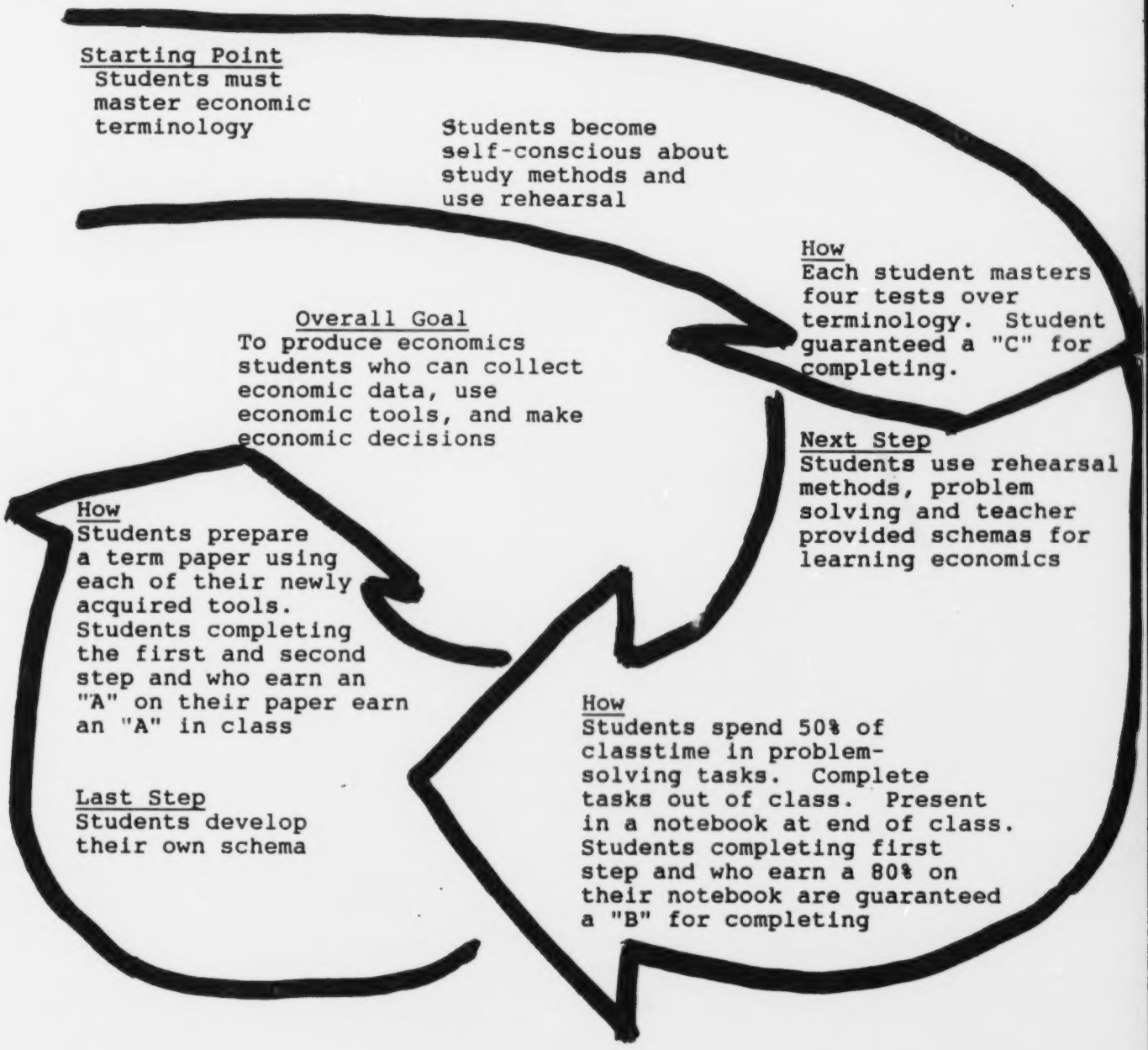


possessor of information given out in small doses on an as-needed basis. We had become facilitators rather than expert teachers. If students did not master material, we were no longer poor teachers or villains. Instead we were the one's who could clarify or explain a little better than the book did so that students understood and could apply their knowledge. In his book, Masters: Portraits of Great Teachers, Joseph Epstein (1981) included these comments by Bertrand Russell as he recalled Alfred North Whitehead. As a teacher he was "extraordinarily perfect," reported Russell.

> "He took a personal interest in those with whom he had to deal and knew both their strong and their weak points. He would elicit from a pupil the best of which a pupil was capable. He was never repressive, or sarcastic, or superior in any of the things that inferior teachers like to be. I think that in all the abler young men with whom he came in contact he inspired as he did in me, a very real and lasting affection" (p. 68).

In the past, we may have earned some level of affection from the one or two students who earned an "A" eg., really mastered the material in a class. Now we have a room full of good students who share a feeling of satisfaction from taking an economics course, mastering its contents, who can more successfully take the next course, and who can function better as citizens. As mentioned previously, the small class size at Hazard Community College has prevented us from attempting controlled experimentation. I have included my teaching evaluations for Fall 1988 (pre EcSL) and Fall 1990 (first use of EcSL). Hazard changed evaluation instruments during this period. Thus, the comments section of the

Table 5
EcSL Process and Goals


Starting Point
Students must master economic terminology
Students become self-conscious about study methods and use rehearsal
How
Each student masters four tests over terminology. Student guaranteed a "C" for completing.
Overall Goal
To produce economics students who can collect economic data, use economic tools, and make economic decisions
Next Step
Students use rehearsal methods, problem solving and teacher provided schemas for learning economics
How
Students prepare a term paper using each of their newly acquired tools. Students completing the first and second step and who earn an "A" on their paper earn an "A" in class
Last Step
Students develop their own schema
How
Students spend 50% of classtime in problem-solving tasks. Complete tasks out of class. Present in a notebook at end of class. Students completing first step and who earn a 80% on their notebook are guaranteed a "B" for completing

evaluation were the only similar components and are thus presented. My observations of these comments are that in Fall 1988 I had smaller micro classes (11 and 19 students) but more comments than in the Fall of 1990. Also, the number of negative comments was smaller in Fall 1990 when I had 29 students in micro. It would appear that more trust and student satisfaction prevailed in my Fall 1990 classroom than before EcSL methodology was used. (See Appendix 2, 3, and 4)

One problem encountered by using institutionally administered student evaluations at Hazard Community College was that they are completed by students about half way through class. This is an administrative tool as opposed to a teaching tool, thus the irrational time frame. The result was that students acknowledged little impact by mid-term. We administered a more specific evaluation instrument at the conclusion of the fall 1991 term. Only one micro class was offered that term. The class results appear in Appendix 5. They seem to indicate that the students were pleased with the teaching methodology and the outcomes obtained from this class. Students indicated that the course (1) helped them to think and draw conclusions, (2) think about their study methods, (3) use self-questioning methods, (4) use rehearsal methods, (5) use problem-solving methods, (6) use teacher-provided schemes, (7) develop their own schemes, and (8) accelerated their efforts in a nonthreatening manner.

Conclusion

EcSL appears to offer promise as a teaching approach. Students are encouraged to study economics as a process of thinking and resolving dilemas after collecting, treating, and presenting data. The students master economic terminology, apply economic tools, and present the results of their own independent study to other students and the instructor in a systematic learning process. This approach was based upon earlier work by Rendigs Fels in which he encouraged students to study economics from a foreign language learning model rather than from a history or literature learning model.

Notes

[1]This paper represents an evolutionary process. It was originally presented at the Teaching Economics: Instruction and Classroom Based Research Conference at Robert Morris College, Pittsburg, Pennsylvania February 8, 1991 under the title, "Sweat Equity: A Powerful approach to Teaching the Principles of Economics Courses." That title did not adequately portray the range of activities that were involved in this teaching approach and the current title was first used in a presentation to the Kentucky Economics Association in Lexington, Kentucky on October 25, 1991. Additions to the current paper include (1) Table 4. EcSL Classroom Activity, (2) Appendix 5. Results of a Student Evaluation at the end of the Fall 1991 term, and (3) Appendix 6. A copy of the Microeconomics course handout distributed to students on the first day of class.

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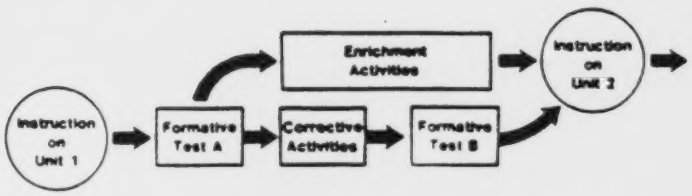
Appendix 1

Various Mastery Learning Models

Characteristics	Mastery Learning (Bloom)	Personalized System of Instruction (Keller)
1) Basis of instruction	Group	Individual
2) Pace of instruction	Teacher determined	Student determined
3) Primary source of instruction	Teacher, supplemented by materials	Materials, supplemented by the teacher
4) Standard of mastery	80%-90%	100%
5) Number of retake tests per unit	One	As many as needed for mastery
6) Correctives	New and different approach	Repetition of original material

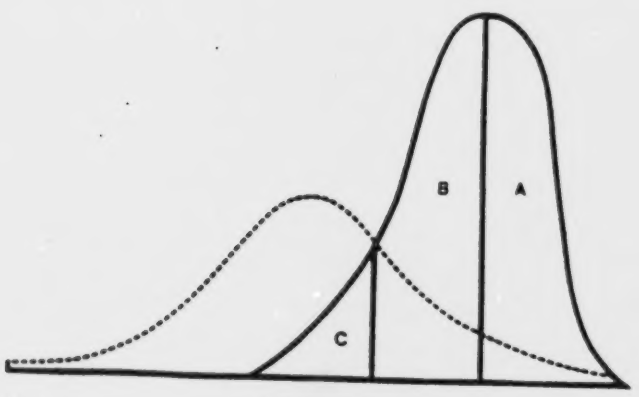
(p. 54)

Differences Between Mastery Learning and Personalized Systems of Instruction



(p. 52)

The Mastery Learning Instructional Process



(p. 51)

The Distribution of Achievement in Mastery Learning Classes

Guskey, Thomas R. Improving Student Learning in College Classrooms. Charles C. Thomas: Springfield, Illinois, 1988.

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Appendix 2
Principles of Economics I (Micro)
Student Evaluation Comments
Hazard Community College
Fall 1988, 11 students
(pre EcSL)

ECO 201-02
R. Crowe
Fall 1988

Comments:

1. The instructor gives good and interesting lectures, the book was hard to understand and the tests were hard to understand since they were book tests. I feel the classes would benefit more and learn more if he test us more from his lectures.
2. He does a good job explaining contents of the book. The test are confusing.
3. Mr. Crowe is a good teacher and a fair one but the textbook for this class was confusing and hard to understand.
4. He does a pretty good job explaining things but I think he puts too much on one test. I don't like the idea of having the final exam being the only grade that counts. You need other work to help your grades.
5. Mr. Crowe is very knowledgeable about the subject of economics but the course covers so much material that it is hard to grasp. The tests are written in a way that makes it difficult for the students. You can study and have a pretty good understanding but do poorly on the test. This is not Mr. Crowe's fault but a different form of test would be helpful.
6. Mr. Crowe goes into great detail when trying to explain a law, theory, or new concept from the text. He uses everyday examples that are easy to relate with to enforce his lectures. One of his better methods is the use of the communications ball for review. He asks a question then hands the ball to a student. The student then has the floor and is allowed to answer the question. If he or she cannot answer it correctly all they have to do is hand the ball to someone else. There is not pressure but it stimulates interest and aids in learning. He is an excellent teacher.
7. Enthusiastic, knowledgeable, interesting, and concerned. Mr. Crowe is an inspiring, professional Educator.
8. I felt Mr. Crowe did a very good job in teaching the course.
9. I feel that what is discussed in class does not pertain to what is covered on the test. The instructor also doesn't cover the material in detail. The instructor also does not seem to be concerned about the student learning the material.
10. Mr. Crowe is a very good and effective instructor. He presents material very well and he has a very thorough knowledge of the courses he teaches.

Appendix 3
Principles of Economics (Micro)
Student Evaluation Comments
Hazard Community College
Fall 1988, 19 Students
(pre EcSL)

ECO 201-01
R. Crowe
Fall 1988

Comments:

1. I don't particularly enjoy this class. I feel that the instructor could make the class more interesting. But I am learning.
2. Make test questions more to the point and less generalized.
3. Well presented and prepared.
4. In my opinion the instructor tries to help everyone understand the subject and give a better view of things.
5. Mr. Crowe makes a boring subject more interesting.
6. Mr. Crowe shows interest in his students and tries to help them as much as possible. He is a very helpful and caring instructor.
7. He was well prepared. Had a good grading system. Tests harder than other introductory courses.
8. Mr. Crowe make economics interesting by applying the principles of economics to everyday situations. I think economics should be required at the high school level because it helps you become a better consumer by helping you to understand how the market system works.
9. I enjoyed the class. Mr. Crowe makes it interesting.
10. To short of time before tests needs to slow down. Hard to absorb everything so fast otherwise good teacher, easy to understand really enjoy the class.
11. Covers everything very well in class.
12. He does a real good job of relating facts and outstanding stories to the class.
13. He is a good instructor. He does know how to relate, but he doesn't take enough time to let us absorb it all.
14. Mr. Crowe is a very good instructor. He knows his material and presents it to the class in an understanding way. I feel that he does a very good job considering the fact that economics is not a very interesting subject to many.
15. He's a good instructor.
16. Mr. Crowe is alright. He knows his stuff. His multiple choice tests are really too tricky.

Appendix 4
Principles of Economics I (Micro)
Student Evaluation Comments
Hazard Community College
Fall 1990, 29 students
(first use of EcSL)

R. Crowe
ECO 201-01
Student Evaluation
Fall 1990

Comments:

1. His performance is very good in this class. He increases interest in the subject and presents material very nice.
2. Mr. Crowe makes good use of time and to make a difficult subject easy.
3. A really super teacher.
4. He wants you to learn and is very understandable.
5. Mr. Crowe is a class individual who gets into good rapport with the class and has a vast knowledge of his subject.
6. Knows subject. Seems concerned as to progress of students.
7. The instructor is very knowledgeable in his field. He often presents views in class that are not expressed in the text.
8. Gives very interesting lectures, also asks thought-provoking questions. Stimulates interest in the class.

Question Number One: John Maynard Keynes has said that "Economics is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw conclusions." Has this course helped you to think and draw conclusions?

Responses: YES = 17 (100%); NO = 0 (0.0%)

Unabridged Student Comments to Question One

1. Yes, because I understand more about how to go about distinguishing the difference in the information that is available so I understand more about what I am doing.

2. Yes, I'm more aware of how much a market marks up their prices, why they mark them up, and that one product really isn't much better than another just because it's advertised that way.

3. Yes, I think I can think through things better. Like when I go to the store, I try to see which item best fits me.

4. I think I am better able to think and draw conclusions after this class due to the learning I have received.

5. Yes, it's very different. All I can think about is how companies are trying to screw me on their products. It makes me think alot more before I purchase something.

6. John Brown has the sign in his room that states "If you know the rule, anybody can play the game." I know some of the rules now. If the course has any lasting appeal for me, (and it does) then most of that appeal comes from the theoretical, problem solving approaches I've encountered here. (Author's note: John Brown teaches Government at the same school.)

7. I think I have learned the value of thinking things through from the beginning to the end and drawing accurate conclusions. I will admit that this class is more challenging than some that require simple memorization and recall as this class required more of a grasp or mastering of the economic concepts. It presented me with a new way of thinking.

8. In an economic situation I can reason things through. With a little more time and study I shouldn't have too much trouble.

9. Definitely, I find that I'm using many economic principles in my mind than I hadn't even considered at the beginning of the semester. I thought it would be just a hum-drum class, but now I have reconsidered and come to the conclusion that it has altered my thinking processes.

10. Yes, I am now able to take my time about making decisions. I can figure out which purchase will give me more for my money.

Question Number One Continued

11. The class has made me more aware of marginal utilities, etc. I now take more time considering purchases weighing cost against benefits. The material in the book is extremely difficult but the mastery method test taking is helpful.

12. After taking micro economics I am aware of more things that go into the decision-making process. Some of them I was already doing but didn't know the name applied to the process.

13. Yes, before the class I just bought what I could afford without thinking too much about if the product was going to meet the needs of my family or if the product would be worth the money.

14. Yes, now before purchasing something I think of the benefits that item will give in comparison to price. I also realize while writing the paper that I had learned a lot.

15. I feel that I have made some improvement in my understanding of economics. Now when some economics news comes on TV or radio I can understand it better, but sometimes I am still lost.

16. Yes, now we know what things must be considered before we make an economic decision.

17. Yes. I am more knowledgeable about products being differentiated and how name brand products are not always the best products to purchase, they just cost more.

Question Number Two: One authority on teaching economics says that in order to learn economics students have to (A) think about their study methods, (B) use self-questioning methods, (C) use rehearsal methods, (D) use problem-solving methods, (E) use teacher-provided schemes to organize economic knowledge, and (F) should be able to develop their own schemes to study economics.

A. Students have to think about their study methods. Did this method help you to think about your study methods?

Responses: YES = 17 (100%); NO = 0 (0.0%)

Unabridged Student Comments to Question Two (A)

1. It was better because I knew where I had missed them so it helped to learn them.

2. It helped because the material stayed with me better.

3. I think the study methods was a great way to learn the terms. It worked really well.

4. It helped me to keep taking the test over. I learned alot more this way.

5. Study methods/testing methods - the first test blew my mind and the retake left me in tears but I think it does make you learn and gives you a chance.

6. Mastery learning works well. Some of the pressure is taken off to perform, and we're led through the material until we "have it." Having it is tough in that this course is a bit like taking a class that is both philosophy and statistics and taught in Mandarin Chinese.

7. This was a different but excellent way of making sure we understood the material thru new study techniques.

8. This method was a good way of learning the concepts.

9. Even though I only took one test over, it gave me a certain confidence I didn't have in any other class this semester.

10. Very well, each time I done the questions, I understood more and learned what the terms really meant.

11. Mastery method was helpful, instead of learning a "dictionary" we learn ideas and concepts.

12. The review was good--it gave the chance to see why the answer were wrong.

13. It helped me to learn the material in that by rereading and writing down corrections better enables me to learn the material.

Question Number Two Continued

14. The process worked really well. After being tested then reviewing and testing I learned more than I had just been tested.

15. I rather did like making corrections. It did seem to help me.

16. Test mastery helped you to really master the material covered in the text.

17. I liked being able to retake tests after writing corrective paragraphs because it helped the information stick better with me.

B. Students have to use self-questioning methods. Did this method help you to use self-questioning methods?

Responses: YES = 16 (94%); NO = 1 (6%)

Unabridged Student Comments to Question Two (B)

1. I questioned myself about when I missed the question so I learned it better.

2. The same as the first, after reasking myself I realized the correct way and understood it more.

3. The self questioning didn't help me as much as the study method. I actually didn't know what question to first ask myself.

4. Yes. I learned more economic terms due to questioning myself.

5. The correctives made me look at the questions and look them up in the book. I gained a better understanding of the material.

6. Yup. They helped alot. In fact, the process of having deficiencies uncovered and subsequently reminded (by correctives) is that part of the mastery method that works the best.

7. The correctives helped me better understand what I missed, why I missed it and helped me get the correct grasp on the answer.

8. By redoing the questions I learned the book information better.

9. Otherwise I wouldn't have remembered them on the test.

10. Yes, reviewing the material helped tremendous. If I didn't exactly understand, then doing the questions helped.

11. When you retake a test you are required to write a paragraph on each of the items you missed, this forces you to learn more and therefore will help you remember longer.

12. A good reinforcement technique.

Question Number Two Continued

13. Yes the process of doing the correctives helped me to learn the material.

14. Yes, when I had to redo the question I would ask myself why did you miss this question, and after finding the answer I would understand why.

15. It seemed to help me learn the material better. Kind of refreshed my memory and make me look at things from a different angle.

16. The correctives are very important in the learning process of mastering the material.

17. The correctives helped me to understand the information more clearly and why it was that answer.

C. Students have to use rehearsal methods. Did you use rehearsal methods?

Responses: YES = 12 (71%); NO = 5 (29%)

Unabridged Student Comments to Question Two (C)

1. It was not very good for me because I'm not very good at papers and I just hope that I didn't tell someone something wrong.

2. Of course it helped because the more you do something, the more you know it.

3. I like the rehearsal method, it makes you look over and over your paper.

4. The peer review helped me with my paper. They found mistakes I couldn't see.

5. I didn't like the peer review because I would have rather had people I knew do the checks on it. Some of them are college graduates and could really do a better job.

6. I do this anyway. I do correctives for every test in every class in order to overlearn it.

7. The rehearsal method was a good way of seeing if I could put together all the concepts I learned and apply them to a topic.

8. The peer review was helpful and mastery learning helped me learn the information better.

9. I did not really take that much interest in the peer review, I'm a very centered individual and I don't like having other people's noses in my writing efforts.

Question Number Two Continued

10. Gave me ideas that I didn't realize or just wasn't aware of at the time.

11. As far as the peer review on the term paper, this would be helpful if the students were required to turn the paper in sooner i.e. 3 weeks before end of semester and given a deadline i.e. 2 weeks before due date to let other students review their papers i.e. today is the last day of regular class, I am suppose to 'review' three other students' paper none of which I have seen.

12. Did not use peer review did not share my opinion with other students.

13. The input form, the peer review, and the mastery learning is a big help for me it shows me errors that I didn't catch.

14. The peer review on the paper helped me a lot. If the other students had not reviewed my paper I would have had a lot of mistakes.

15. I feel it worked okay.

16. This helped us apply what we know about economics.

17. It worked very well because it showed me how to improve myself before the grade was decided upon.

D. Students have to use problem-solving methods. Did you use problem solving methods?

Responses: YES = 14 (88%); NO = 2 (12%)

Unabridged Student Comments to Question Two (D)

1. The notebook was very helpful and interesting and I liked drawing the graphs pretty well.

2. When drawing the graphs it helped me to understand them more, because I learned what they were saying as I drawed.

3. The notebook activities helped me learn about the material we were doing, it was like a hands on experience.

4. The notebook helped me to visualize the problem and find an answer.

5. I enjoyed doing the notebook work although sometimes I fell behind, because I knew you didn't check it. I love to do graphs!!!

6. The notebook proved helpful to me in making sure I understood what I thought I knew.

Question Number Two Continued

7. The notebook was interesting but I would give more info and let the student draw the graph and have less copy work.

8. The notebook was a good ideal, if I had taken much interest in it.

9. The graphs helped alot in understanding the material. If I forgot, then I could review by looking back.

10. The notebook was not helpful.

11. It would have been better with a paragraph of statistics that would be used to make graph. (with exception titles)

12. The notebook helped me to see how much I've learned.

13. The notebook seemed to help me recall graphs and to understand them.

14. The notebook helped me understand why the end result graphs look like they do.

15. The notebook was helpful in learning the processes used in economics.

16. The notebook helped me in being able to understand the graphs better and why they were set up that way.

E. Students have to use teacher-provided shcemes to organize economic knowledge. Did you use teacher-provided schemes?

Responses: YES = 17 (100%); NO = 0 (0.0%)

Unabridged Student Comments to Question Two (E)

1. Yes, it was very effective but I still had some trouble understanding some of them so I guessed more of it.

2. They helped and I think more of these would help more because if you do as you go I learn better.

3. The plots were a hand on experience, I think there should be more hands on material.

4. They were very much effective in the understanding of economics.

5. Sometimes I liked it and sometimes I wanted to kill you for it, probably because I didn't have my supplies with me to do the graphs. Probably do a little more since alot of the students weren't grasping it.

6. Yeah, the Keynesian approach getting the hands into "it" is great. Do more, perhaps based on more "tangible" data.

Question Number Two Continued

7. More of this teacher guides would be helpful to students struggling to grasp a difficult concept.

8. They were mostly copy work though some were just data. Do more data then drawing graphs in class.

9. The applications should have been done more often because they are very helpful in learning the concepts in class.

10. Yes, drawing them helped in understanding the material. I feel that more you draw out the more will be understood.

11. In class activity would be more helpful if students were given more time.

12. Helped to identify what lines represented again feel would be better with a paragraph of new statistics to plot.

13. Yes the schemes were effective. And yes I think we could do more of it.

14. Working with the graphs and problems in class helped me to understand the things clearer.

15. I was lost in this area. I think more should be done at a slower pace.

16. Yes.

17. It helped me because when in class I could see whether or not if I understood how the graph actually worked, I would've liked to have done more of them.

F. Students should be able to deveop their own schemes to study economics. Were you able to develop your own schemes?

Responses: YES = 17 (100%); NO = 0 (0.0%)

Unabridged Student Comments to Question Two (F)

1. I wasn't very confident with writing my paper because I have trouble writing papers but so far as the teaching went it was very effective yet wasn't sure I was doing it the way it was supposed to be done.

2. I didn't feel very comfortable because the terms from the book weren't all clear to me. But from doing my paper I learned there is a big demand for coal and I can't understand why the coal industry here is in such bad shape.

3. Well, we had to do several hours of research for the paper, it is a hard paper to organize.

Question Number Two Continued

4. I was able to do the paper, however, I didn't feel confident about the structure.

5. I think we should have had the guidelines for the paper earlier. I also think my topic was impossible. I did the best I could.

6. Any lacking in my paper is my shortcoming. You presented the material, gave absolutely wonderful examples of the "world," etc.

7. The paper helped me to put together everything, all the concepts, I learned. It was a bit scary when I started the paper but I got more comfortable with it as I progressed into the paper.

8. The paper was a good idea. It helped to use the ideas learned in class and put them to work.

9. I know the terms and the paper helped me but I don't think I did a very good job on it.

10. I felt as though we should have had more time to work on the papers. I really didn't know what to search for as for as figures.

11. Writing the term paper enables you to use what you have learned and apply in a logical manner.

12. As we discussed things in class I tried to apply them to industry targeted for report was helpful in determining how market is divided.

13. Yes I felt comfortable doing the paper. By doing the paper I learned about the industry let alone the firm.

14. I had a little problem with the paper. I did not want to do it. But while writing the paper I realize I had learned a lot.

15. I felt very comfortable doing the paper. I feel I've done well on it, but knowing this class I may have messed up.

16. Yes, somewhat.

17. I liked the information that I obtained, it was very interesting to try and construe my economic applications.

Question Number Three: We tried to make the course non-threatening as a learning experience. How did we do?

Responses: Little or No Fear = 13 (76%);
Somewhat Fearful or Fearful = 4 (24%)

Unabridged Student Comments to Question Three

1. I was scared because I was afraid of failing the class and I had a lot of worries about it.
2. The whole course went o.k. except for the paper and I was really unsure about it.
3. It was better to know that we could receive a C over the test.
4. I was comfortable with the approach because you could take the test as many times as you wanted until you passed.
5. Because it was a subject I knew nothing about, I had constant anxiety, but I guess I've lived through it.
6. Change nothing in the approach.
7. Not at first, but I got more comfortable with the new methods of learning as the semester passed.
8. The course was none-threatening (you succeeded).
9. The approach was good, my mentality was bad, but I think the low stress conditions did help me.
10. The questions helped in understanding the paper.
11. The course material was threatening but the method presented in teaching helped to reduce threat.
12. Good enjoy being able to retest.
13. Yes I was comfortable with the class.
14. Yes; I guess.
15. I was fairly comfortable with approach but I was intimidated by the magnitude of material.
16. Yes.
17. I was threatened at first, but the further that class went on, I felt more comfortable with it.

SUMMARY

1. Has this course helped you to think and draw conclusions?

Yes = 17 (100%)
No = 0 (0.0%)

2. A. Did this method help you to think about your study methods?

Yes = 17 (100%)
No = 0 (0.0%)

B. Did this method help you to use self-questioning methods?

Yes = 16 (94%)
No = 1 (6%)

C. Did you use rehearsal methods?

Yes = 12 (71%)
No = 5 (29%)

D. Did you use problem solving methods?

Yes = 14 (88%)
No = 2 (12%)

E. Did you use teacher-provided schemes?

Yes = 17 (100%)
No = 0 (0.0%)

F. Were you able to develop your own schemes?

Yes = 17 (100%)
No = 0 (0.0%)

3. We tried to make the course non-threatening as a learning experience. How did we do?

There was little or no fear = 13 (76%)
Somewhat fearful or fearful = 4 (24%)

Appendix 6
Course Handout Given to Each Student
on First Day of Microeconomics at
Hazard Community College

Spring 1992

A. Richard Crowe, Professor
Office #225
Phone: 436-5721

B. Course: ECO 201, Principles of Economics I (Micro), 3 hours
M W F 10:10 - 11:10 Rm. 113

Description:

An introductory course. The theory of income and employment and value theory. Not open to freshman. Teacher's interpretation: we will study the decision-making process for individuals and business concerns with regard to their use of scarce resources.

C. Text: Principles of Microeconomics, Froyen and Greer, 1989, MacMillan Publishing

D. Objectives:

1. To enable the student to recognize, understand, and effectively operate within economic situations based upon demand and supply.
2. To enable the student to recognize, understand, and effectively operate within economic situations involving imperfect competitors, i.e., monopoly oligopoly, and many differentiated product models.
3. To enable the student to recognize, understand and effectively operate within a world economy based upon production and pricing.

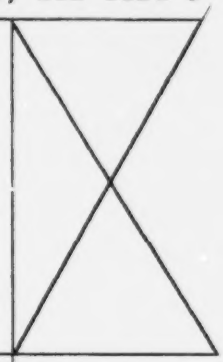
E. Method of Instruction:

1. Students will learn terms and applications through mastery learning.
2. Classroom activities will emphasize active learning through discussion and hands-on projects.
3. Students will demonstrate their economic knowledge by presenting a notebook and a final paper defining current economic conditions for a specific company.

F. Assignment Schedule:

In class activities

Week:	1	2	3	4	5	6	7
In class Topic	Ch. 1 Scarcity And Economic Methods	The Market	Role of Government -And- Ch 19 Public Choice - - - Test 1	American Business - - - Do Correctives and Retake(s) for Test 1	Consumer Choice - - -	Demand	Supply - - - Test 2
Notebook activities	Define the five (5) basic economic questions and show different graphs: positive, negative, production possibilities curve	Show shifts in demand; supply	Define Conservatives v. Liberals Give an example of the public choice decision making process.	Describe how successful and how stable your selected firm has been	Solve MU/P problems - - - Graph Consumer Surplus	Graph: demand curves, and product life cycle for your firm	Graph rising, falling productivity - - - Describe market supply for your firm's major product
Paper	Think about which U.S. company you would like to study this term. It should be publicy traded and not be a requested monopoly.	Choose a U.S. firm for your economic analysis	Collect economic data on your selected firm. Start with Hoover's Handbook.	Make a copy of the Value Line description of your selected firm	Find an additional article about your firm in Fortune, Barron's, etc.	Determine E_d for your firm's major product - - - Compare rate of growth for your firm and its industry/ statistical abstract of U.S.	Determine where your firm operates in terms of economies of scale

Week:	8	9	10	11	12	13	14
In class Topic	Product Markets - - -	Perfect Competition - - -	Monopoly	Oligipoly - - - Test 3	Non-Price Competition - - -	Labor, Land Capital, and Entrepreneurship - - -	Poverty, Inequality, Discrimination - - -
	Do correctives and retake(s) for Test 2				Do correctives/retake(s) for Test 3		
Notebook activities	Describe basic conditions, market structure, market conditions and performance for your firm	Graph model of perfect competitor	Write a one page summary and include a copy of a recent article about monopoly activity	Determine concentration ratio and H index for your firm and its competitors	Show various ads used by your firm. Identify by type of ad, goals, target market, etc	Submit notebook	
Paper	Find an additional article about your firm	Find an additional article about your firm	Find an additional article about your firm	Include concentration ratio and H index analysis for your firms competitors from above	Determine the type of competitor your firm is from its concentration ratio and H index	Complete paper	Have paper reviewed by peer team -- make recommended corrections

Week:	15	GRADE
In class Topic	Do Group Projects: Think Like an Economist	80% or higher on tests plus notebook plus paper = C
Notebook activities		80% + on tests plus 90% + on notebook plus paper submitted = B
Paper	Submit completed typed paper	80% + on tests plus 90% + on notebook plus 90% + on paper = A

G. Attendance Policy:

This course will require a great deal of your time. You should plan now so that time will be available as needed. You should be in class whenever humanely possible because missed classes will make it extremely difficult to complete all assignments.

H. Evaluation:

In this class we will use a mastery teaching approach designed to provide students with more knowledge before moving on to new material. Three tests will be given during the term. After each test is graded those that desire to improve their grade may do so by writing a correcting paragraph for each question missed on the exam. When this is accepted the student may take a second exam in the learning center. This process will be repeated until the student scores 80% or higher on the three exams. Each student that successfully completes the exams with an average of 80% or higher and submits a notebook and paper is guaranteed a "C" in the class. In addition, each student will have daily class activities which will be turned-in in a notebook at the end of the term. Students who earn 90% or higher on their notebook and who have earned 80% or higher on the exams are guaranteed a "B" in the class. Finally a term paper using the newly learned economic terms as the basis of analysis of a specific firm is required. Students who earn an "A" on the term paper and who have mastered the test material and daily activities are guaranteed an "A" for this class.

I. Notes:

1. Students may officially withdraw with a grade of "W" up to the last class.
2. On test days please leave an open row between desks.
3. A normal class requires two hours of study for each hour of class. Plan your schedule accordingly. College is like a full-time job.
4. The teacher reserves the right to make changes in the above format as deemed necessary during the semester.
5. No smoking is permitted in the classroom.
6. Students who, as determined by the instructor, have cheated on any class work will receive a failing grade from this course.